Dräger MEDICAL

Test Certificate

Incubator 8000 IC

File no.: 6141.222

Edition 01.2003

DrägerService

Installation site: _____

Explanation of symbols

— OK

| Defect/error/fault

◯ Spare parts used

／ Report

∩ Accessories missing

C = Check condition

O = Check function

L = Check for leakage

V = Enter test value

Serial no.: _____

Date of delivery/ startup: _____

Invoice no. or delivery no.: _____

Other: _____

For internal use only! © Copyright reserved.

Enter software version, see test item 3.1. V

1. Information about accompanying documents

1.1 Instructions for Use (depending on software version)

SW 20.n:
GA 6141.222
- German 90 27 494
- British English 90 27 494
- American English 90 28 054
- Dutch 90 28 031
- Italian 90 28 032

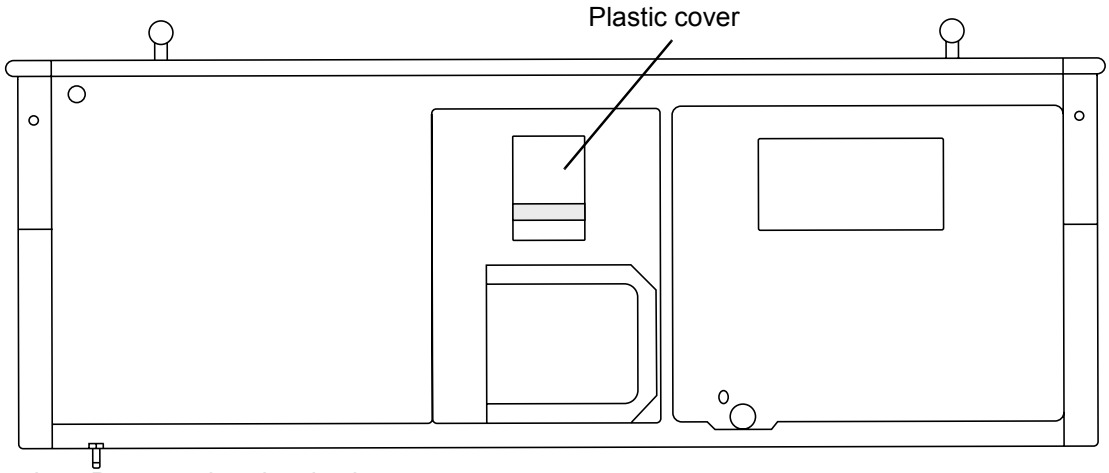
SW 21.n:
GA 6141.222
- German 90 28 264
- British English 90 28 260
- French 90 28 487
- Spanish 90 28 488
- American English 90 28 489
- Dutch 90 28 490
- Italian 90 28 491

1.2 Equipment manual

1.3 Operating instructions for special accessories. Operating instructions must be available in appropriate combination in line with entry in equipment manual.

2. General condition

2.1	Trolley	C	
2.1.1	Castors Castors 100 mm 2 castors 2M 20 250 and 2 lockable castors 2M 20 260 or Castors 125 mm 2 castors 2M 20 794 and 2 lockable castors 2M 20 792	C O	
2.1.2	Protective caps (orange) 2M 20 348 Note: protect castors.	C	
2.1.3	Height adjustment with pedal	C	
2.1.4	Check screw fastenings 2 Allen screws between trolley and pedestal (covered by caps) 4 Allen screws between baseplate on the pedestal and basic housing.	C	
2.2	Cabinet left, right (if applicable)	C O	
2.3	Incubator backpanel		
2.3.1	Checking that plastic cover is fitted properly **Warning:** The plastic cover covers the power connection. Unplug the power cord before carrying out the test.		



Procedure: Press against the plastic cover using one finger.

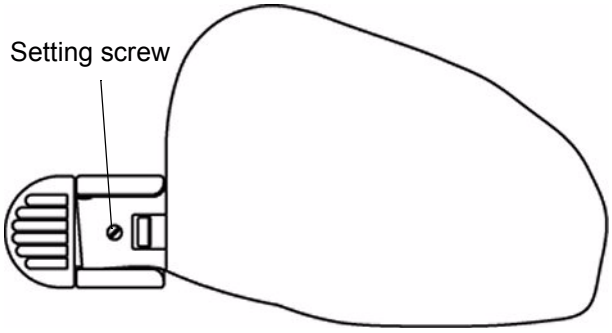
		The plastic cover should not move. If the plastic cover should come off, glue it on using Wacker Elastosil E50.			
2.3.2		Flap compl. 2M 20455 with catch 2M 19271 and retaining strap 2M 12045	C O		
2.3.3		Filter receptacle Inc. 8000 IC: Flap for fresh air filter and filter holder 2M 20289 (washer)	C O		
2.3.4	*	Replace fresh air filter 84 02 926	C		
2.3.5		Sticker 2M 20056 “dist. water”	C		
2.3.6		Mains connection Inc. 8000 IC			
		Compare mains fuses with stated values, power-cord feedthrough 2Mþ13076 and supply mains 84 00808	C		
2.3.7		25-pole male connector for air temperature sensor	C		
2.3.8		9-pole female connector RS232 (if applicable)	C		
2.4		Handles 2M 19541 at the front of the incubator	C		
2.5		Connection socket for external oxygen supply	C		
2.6		Incubator canopy	C		
2.6.1		Air temperature sensor with holder			
2.6.1.1		Swivel out air temperature sensor			
		There must not be a gap > 0.5 mm between sensor housing and metal or plexiglass block below the air temperature sensor.	C L		
2.6.1.2		Remove air temperature sensor from retainer and examine connector, cable and female connector for external damage	C		
2.6.2		Swivel window with seals			
		Adjust swivel window such that pane makes contact with seal. Check engagement and holding; to do so shut swivel window by exerting slight pressure such that retainer engages precisely. Then pull with fingers on outer edge of swivel window and move swivel window up and down:			

Swivel windows must not open.

C O

If necessary, reduce the force applied to the rubber cone with the setting screw (if available) or by shortening the rubber cone.

Adjust the swivel window using the setting screw.



Slowly turn the setting screw of the retainer clockwise until the previously closed swivel window opens. Then turn setting screw 2 full turns counter-clockwise.

C O

Repeat test item 2.6.2.

2.6.3 Hose feedthrough

C

2.6.4 Double walls with holder or removable double wall option (only on right and on back).

C O

Important:
The double wall below the air temperature sensor must always be available. The removable double wall option (on right and back) is only permissible for resting surface with lateral tray.

2.6.5 Front flap, split or unsplit, with catches 2M 19899, double wall (must be available), catches for double wall 2M 19516 and 2 retainers 2M 19848 with 2 O-rings each.

C O

2.6.5.1 Spring catches of front flap

Check function of the reset spring.

C O

2.6.5.2 * Replace spring 84 00496 of spring catches every 6 years.

C

Next replacement due: _____

2.6.5.3 Hinge frame 2M 19542

C

(Note: When disassembling the hinge frames turn Allen screw clockwise)

2.6.5.4 Tappet complete, 2x

C O

Function of reset spring with unsplit front flap or retaining function

2.6.6 Canopy holder C

Afterwards remove front flap, air temperature sensor and canopy with split front flap.

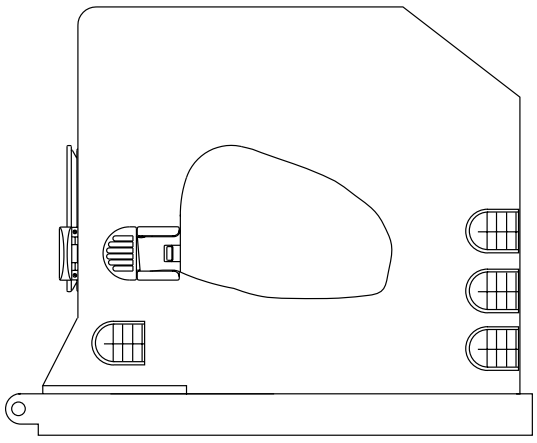
2.7 Bed with mattress

Check that openings for supports are not damaged and the holding plates are screwed on tightly. C O

Important for removable double wall option: If no removable double wall is fitted to the canopy back, a bed extension 2M 21225 must be available (to be plugged onto the rear side of the resting surface and covering the gap between the resting surface and rear canopy wall).

Note:
Applies to bed 2M 20888 only:

Do not use a bed extension if the incubator has a canopy with curved rear panel and if the rear double wall is fitted, otherwise there is a risk of temperature loss.



2.7.1 Hose holder (if available) C

2.7.2 Bed height adjustment

The bed can be pulled out at any height and any inclined position. Exert hand force on bed in pulled-out condition. C O

2.7.3 Supports for bed height adjustment. C

Then remove bed and supports.

2.7.4 Labels

The "Warning" labels "1" shown below on the front and rear of the bed area are present and not damaged (Note: If the bed edge is too narrow the label should be affixed on the outside on the rear of the cover).

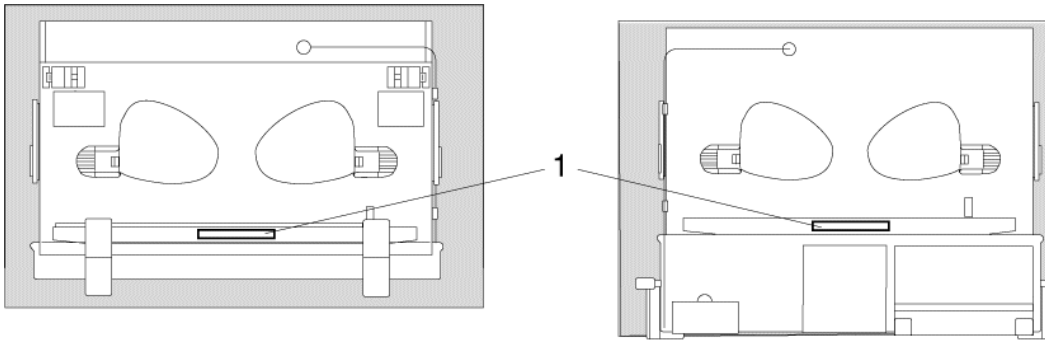


Fig.: Front (left) and rear (right) of bed area

WARNING !
Never block or obstruct air vents in the incubator baselement.
Do not place surical drapes or blankets over the air vents and the infant.
Keep infants and their extremities clear of the warm air curtain.
Danger of serious burns to the infant!

C

Part numbers of labels:

2M22228	German, Dutch
2M22229	English, French
2M22230	Italian, Greek
2M22231	Spanish, Portuguese
2M22232	Swedish, Finnish
2M22233	Norwegian, Danish
2M22234	Russian, Japanese

Note: Each part number includes two labels in each specified language, e.g. 2M22228 contains two labels in German and two in Dutch.

2.8 Intermediate element 2M 19537 (cover surface) C

2.9 Impeller compl. 2M 20205 with metal cone and O-ring M 19241 (large) and O-ring R 22364 (small) or silicone cone 2M 20542 C

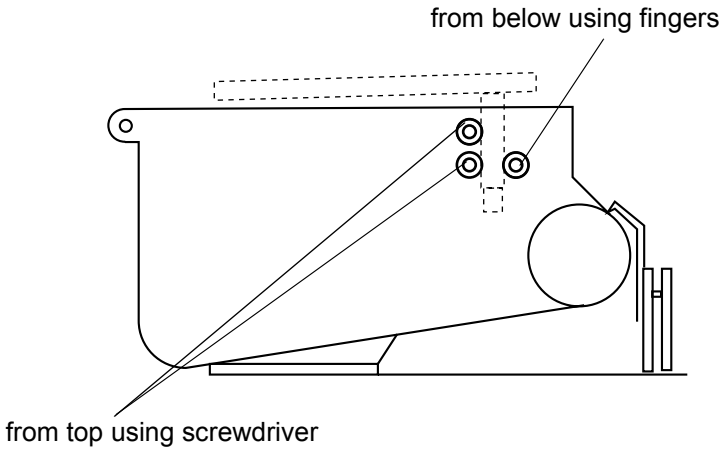
2.10 Trough 2M 19334 with 2x seal 2M 19595 for the supports. C

Then remove impeller and trough.

2.11 Testing ball bearing of height adjustment supports

Open flap underneath electronics assembly.

Check 2 x 3 ball bearing set for easy movement as shown in the Figure below.



If the ball bearing set does not move easily, replace the whole set 1330128 (3). C O

2.12 Aggregate seal 2M 19637 C

2.13 Seal 2M 19638 between motor and trough C

2.14 Seal 2M 20023 between heating and trough C

2.15 Motor

2.15.1 Lubricate motor with oil 2M 20023, to do this remove screw next to motor shaft and pour 10 drops of oil into the threaded bore. C

2.15.2 Check axial play

Test value: approx. 0.2 mm. O

2.16 Condition of boiler

Disassemble boiler.

Test to be performed every year.

Note: Disconnect power cord before and allow boiler to cool down! If necessary, scrape out interior of boiler. C

2.16.1 Evaporator cap

Cap 2M 20292 with O-ring 2M 08777 C

When assembling the boiler Inc. 8000 IC lubricate O-ring of cap, e.g. with soapy water.

2.17 Valve in the fresh air intake at the bottom side of the incubator housing. The leak test is performed under item 6.5. C

2.18 Fan failure test

To do so, mount trough and canopy without impeller, connect and swivel in air temperature sensor, switch incubator on.

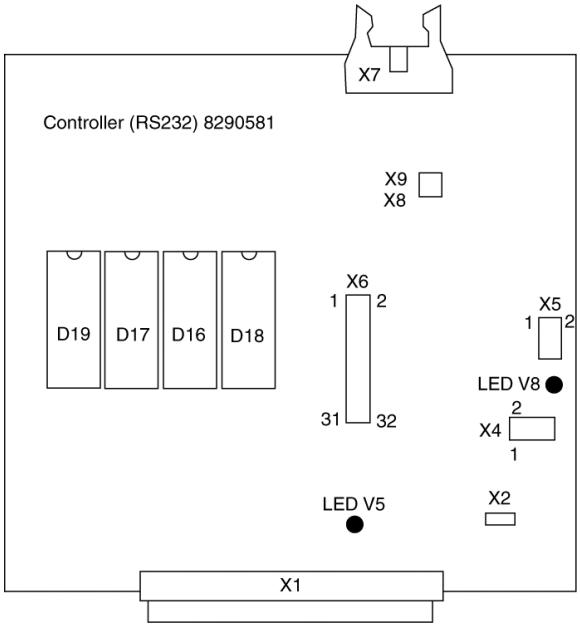
Following 30 s self-test (dashes only on actual value displays of all modules) fan failure alarm is given by means of a continuous tone and visually by the corresponding “fan failure” alarm LED in the air temperature module lighting up, heating LED off. The audible alarm cannot be suppressed by pressing the button “horn off”. O

Switch unit off.

2.19 Function test RS232 interface (if applicable)

To do so, fold down flap below the electronics module after undoing the two locks. The Controller PCB (viewed from the mounting side) is located at the top left of the electronics module.

Controller PCB:



Function test:

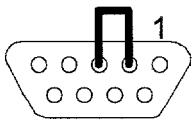
Switch incubator on.

Red and yellow LED light up continuously during incubator self-test (only dashes on the displays)

Incubator self-test completed.

Red LED (LED V5) lights up, yellow LED (LED V8) off.

Produce a short-circuit at the connecting socket for the interface on the device backpanel between Pin 2 and 3 (loop test):



Red LED (LED V5) lights up, yellow LED (LED V8) flashes at a frequency of 1 Hz. O

2.20 Power Pack PCB

From approx. 1993 a miniature fan will be installed on this PCB at the bottom right in the electronics module, which should operate when the unit is switched on. O

Important: This fan is only required if the option RS 232 (Controller PCB) is available. In case this option is not available, you may disconnect this fan if the noise emission is too high.

Then switch off unit and assemble it in

functional condition, do not close the flap below the module.

2.21 Flap in front of the membrane keypad

Legibility of the brief operating instructions C O

2.22 Membrane keypad C

2.23 Additional fan

The additional fan is located below the trough. C

2.24 Seca balance (if applicable) with plug-in power pack 2M 20 640, battery 83 01 856 and label “do not pull out”. C

2.24.1 Function test

Line up balance until water level is vertical. Place the resting surface on the scales and press the “check” key.

Indication of weight shows “test”. Then LEDs and all segments of the indication of weight (8888) are switched on and off several times. Then a test value is indicated which must be between 8990 and 9010. The end is indicated by text “end”. O

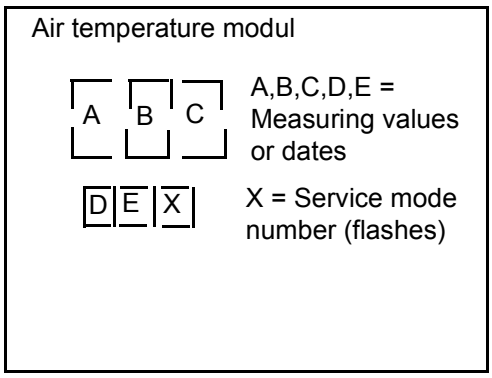
2.25 Monitor rack 2M 19460 (if applicable) C

---

3. Record operating data, air temperature sensor switch test, comparison of measured values of temperature sensors and assessment of O2 capsules

To do so, switch unit on, wait for 30 s self-test to be completed and press buttons “horn off” and “air temperature” simultaneously for 8 s:

“S” is indicated on the actual value displays in the humidity, O2 and skin temperature (if applicable) modules and the number of the service mode flashes in the air temperature module on the lower right display.



The next mode each can be reached by pressing the button “+air temperature”. The service mode can be exited any time by pressing the key “check lights”.

3.1 Mode 0

Software-version AB.CD V

3.2 Mode 1

Operating hours A B C D E in hours V

3.3 Mode 2

Actuating operations of button “check lamps”.

A B C D E = number of actuating operations V

3.4 Mode 3

Actuating operations of button “check 36.0 °C” (only if skin temperature module is available).

A B C D E = no. of actuating operations V

3.5 Mode 4

Sensor switch test in air temperature sensor.

Air temp. sensor swivelled in = 1
Air temp. sensor swivelled out half = 2
Air temp. sensor swivelled out = 3
Air temp. sensor detached = 4 O

3.6 Mode 5

Measured value of overtemperature sensor in °C.

The max. deviation from the measured value of the air temperature sensor (mode 6) may be 0.3 °C. V

3.7 Mode 6

Measured value of the air temperature sensor in °C. V

3.8 Mode 7

Measured value of O2 sensor A (outer capsule in air temperature sensor).

A B C = decimal value of A/D converter. At 21% by vol. O_2 values ranging from 306 (= 9.5 mV) to 812 (= 25 mV) are allowed V

3.9 Mode 8

Measured value of O2 sensor B (inner capsule in air temperature sensor)

A B C = decimal value of A/D converter. At 21% by vol. O2 values ranging from 306 (= 9.5 mV) to 812 (= 25 mV) are allowed. V

Note concerning exchange of the O2 sensors: Should the values be below 325 (= 10 mV) the sensors should be replaced.

3.10 Mode 9

A B C = measured value of humidity sensor in % relative humidity. O

3.11 Mode A

A/D test channel in mV (as of SW 20.03)

ABCD: 4400 ±300 V
Calibration: see repair instruction Analog PCB.

3.12 Mode B

Measured value skin temperature sensor 1 (core temperature, top socket), as of SW 21.n. O

3.13 Mode C

Measured value skin temperature sensor 2 (peripheral temperature, bottom socket), as of SW 21.n. O

3.14 Severe 10 minute test

To do so, press button “reset overtemperature” in service mode 10 times every 2 seconds.

No „INOP“ error message O

---

4. Replacement of wear and tear parts electronics

To do so, fold down the flap below the electronics module after undoing the two locks.

4.1 * Replace battery 83 01 856 on the Power Pack PCB every year. O

Caution: Electrostatically sensitive sub-assembly!

Note: Do not close flap.

---

5. Technical safety check

To do so, fold down flap below electronics module after undoing the two locks.

5.1 Protective conductor test

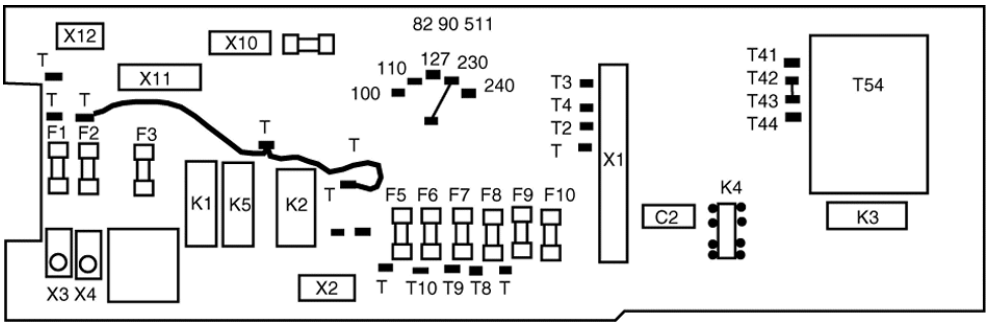
Test items: Protective conductor terminal at the left side of the unit, trolley, screws at the height-adjustable pedestal, flap below electronics module, metal housing electronics module.

Test value: R lower 0.2 Ohm O

5.2 Equivalent leakage current measurement

Caution: Disconnect from mains supply first.

For measurement purposes the switch-on relay and the safety relay must be jumpered.



Actuate height adjustment for measurement.

Subsequent measurements may exceed the first measured value of the test certificate by 50% max. but must not exceed the specified test value.

Test value: I_A lower 1.0 mA V

Note: The first measured value must be recorded in the new test certificate.

First measured value: I_A = mA

With Gerb Eutotester GM-50

Switch positions on Gerb Eurotester:
Application part: all
IEC/VDE standard: VDE 751
Protection class: 1
Test item: Equivalent device leakage current SL

Insert power plug of Incubator 8000 IC into test receptacle of the Gerb Eurotester.

Important:
The measured values indicated on the Gerb Eurotester are approx. 10% lower than the measured values indicated on the Wison VDE tester.

Make sure Incubator 8000 IC is switched on.

Subsequent measurements may exceed the first measured value of the Test Certificate by 50% max. but must not exceed the specified test value.

Test value:

Equivalent device leakage current: lower 1.0 mA V

Note:
The first measured value must be recorded in the new Test Certificate.

Important: After measurement was performed the connections of the solder tags must be removed.

5.3 Visual check of the mains power conducting cables.

The power cords and all visible connecting cables to the unit must be attached safely. A potential transfer to other parts of the unit, e.g. bed height adjustment must be impossible. C

5.4 Bed height adjustment

Visual check of the chain drives. The holders in the chain for the supports of the bed must be fixed securely. C O

Close flap below electronics module and assemble incubator ready for operation.

5.5 Testing the CPU PCB

The 8290571-00 CPU is not permitted for use, see Service Bulletin.

The following CPUs are permitted: 8290571 upper 01 and 8305141. O

---

6. Function check

The function check must be carried out at room temperature (20 – 28 °C). There must be no additional objects in the patient compartment.

6.1 Height adjustment with function of end stops up and down, check the 4 pedals O

6.2 Incubator basic functions

Switch incubator on.

Green operating LED lights up. Dashes are indicated on the actual value display of all modules for 30 s. Any overtemperature warning can be deactivated by pressing the „reset!“ button. O

6.2.1 Press button “Check lights”:

All LEDs except for the power failure LED light up; all digital displays indicate 88.8 and a continuous tone sounds. LEDs and displays are then blanked for 1 second and the horn is deactivated. O

6.3 Air temperature module

The desired value of 33.0 °C flashes. “SEt” and the current air temperature flash alternately in the actual value display. Acknowledge desired value by pressing “+air temperature” or “-air temperature”:

Continuous display of desired value and actual value (except for alarms in the air temperature module). O

6.3.1 Checking the desired value setting and “>37 °C” function O

6.3.2 Set desired value to 36,0 °C

Reference measurement in the centre of the bed at a height of 10 cm using thermometer 2M 11111.

Test value: 36.0 ±1.0 °C. O

For adjustment instructions, see repair instructions.

Note: Check the O2 module during the warm-up phase => 6.4.

6.3.3 Set desired value by 1.6 °C lower or higher than the actual value

Actual value display, “+1.5 °C” LED and “Alarm” LED flash and intermittent audible alarm. Press “horn off” button:

Horn off, actual value display flashes, “+1.5 °C”, “Alarm” and “Horn off” LEDs light up. O

6.3.4 Additional fan

Set desired value by 1.0 °C higher than actual value.

Heating LED flashes, additional fan stops.

Set desired value by 1.0 °C lower than actual value.

Heating LED off, additional fan works, no abnormal noise. O

6.3.5 Heating fan

No abnormal noise of fan motor and impeller. O

Then set desired value to 37.0 °C.

6.3.6 Swivel out air temperature sensor and remove it from the retainer

Visual and audible sensor alarm, heating off. O

6.3.7 Pull plug for air temperature sensor

Visual and audible sensor alarm, heating off. O

Then connect air temperature sensor ready for operation.

6.4 O2 module

6.4.1 Switch on O2 module by pressing button “control” in the O2 module:

Green LED “Control” lights up. The desired value after switch-on is 21% by vol. O2 and flashes. The yellow LED “Cal.” flashes. “CAL” flashes in the actual value display. O

6.4.2 Swivel air temperature sensor out of incubator and press button “Cal.21% by vol.”:

The LED “Cal.” lights up in the calibration phase and “cal.” and “--” flash alternately on the actual value display.

Once calibration was completed, “21” and “SEt” flash alternately on the actual value display.

Do not swivel in air temperature sensor.

After 60 s a visual and audible sensor alarm is given. Swivel in air temperature sensor.

No sensor alarm in O2 module.

Acknowledge desired value by pressing the button “+desired value” or “-desired value” O2.

Continuous display of desired value and actual value O2 (except for alarms in the O2 module). O

6.4.3 O2 sensor alarm

Unscrew first O2 sensor:

	Visual and audible sensor alarm. Screw in sensor and recalibrate. Unscrew second O2 sensor (if applicable).	O									
	Visual and audible sensor alarm. Screw in sensor and recalibrate.	O									
6.4.4	Checking of desired value adjustment and “>40% by vol.” function: If actual value deviates from desired value by more than +5% by vol., a visual and audible alarm will be given.	O									
6.4.5	O2 pressure connection	O									
6.4.5.1	CS-O2 connecting hose	C L									
6.4.5.2 *	Replace filter screw 2M 19622 in gas connection every 2 years. Next replacement due: _____	C									
6.4.5.3 *	Replace pressure reducer 84 02 745 (available from approx. 12.92) every 6 years. Next replacement due: _____ For test value see 6.4.6.2.	O									
6.4.6	Flow measurement downstream of valves To do so establish O2 pressure supply: - 5.0 + 0.5 bar for units without pressure reducer or - 3 to 6 bar for units with pressure reducer Fold down flap in front of fresh air filter and measure flow at the output on the right next to the filter.										
6.4.6.1	Specified desired value 21% by vol. O2 Float must not lift off with smallest flowmeter.	L									
6.4.6.2	Specified desired value by 4% higher than actual value V = 28 +2/-6 L/min Assemble unit ready for operation.	O									
6.4.7	Establish O2 pressure supply - 5.0 + 0.5 bar for units without pressure reducer or - 3 to 6 bar for units with pressure reducer and set desired value to 40% by vol. O2.										

	The set value is reached after 4 minutes max.		
	Comparison measurement using Oxydig:		
	Test value: 40 ±4% by vol. O2.	O	
6.5	External oxygen supply for all incubators		
	To do so, supply oxygen to the incubator via O2 socket.		
	If the rating plate indicates 50 Hz or 50/60 Hz:		
	7.5 +0.5 L/min O_2 at 50 Hz		
	9.0 +0.5 L/min O_2 at 60 Hz.		
	If rating plate indicates 60 Hz: 7.5 +0.5 L/min.		
	Comparison measurement using an Oxydig after 30 minutes.		
	Test value: 40 +4/-6% by vol. O2.	O	
	If the test value is not reached the incubator is leaky or the fresh air intake is faulty.		
	The following must be checked should an error occur:		
	Does the canopy have additional openings?		
	Are the sealings 2M 19595 available at trough 2M 19334 (item 2.10 of test certificate)?		
	Valve leakage (item 2.16 of test certificate) in the fresh air intake.		
	For checking the valve leakage glue up the valve and repeat test item 6.5.		
6.6	Humidity module		
6.6.1	Holder for infusion jars with 3 jars DIN 58363 13 40 697	O	
6.6.1.1	Jar sealing rings 2M 16 045	C L	
6.6.1.2	Silicone hose between evaporator and jar holder	C L	
6.6.2	Switch on humidity module by pressing button “control” in the humidity module		
	Green LED “Control” lights up. The desired value following switch-on is 60%		

	rel. humidity in SW 20.nn or “Aut” in SW 21.nn. The measured relative humidity and “SEt” displays flash alternately. Display range from 0 to 99%. Acknowledge desired value by pressing the button “+desired value” or “-desired value” for humidity. Continuous display desired value and actual value (except for alarms in the humidity module).	O	
6.6.3	Checking of the desired value adjustment	O	
6.6.4	Not applicable		
6.6.5	Water shortage alarm Set desired value to 85% rel. humidity and fold down the backpanel with the filled water jars. After a few minutes (depending on the start temperature of the vaporizer up to 25 minutes), an audible and visual water shortage alarm will be given. Silence the audible alarm by pressing the “horn off” button.	O	
6.6.5.1	Fold up backpanel with water jars: H2O alarm LED off after 6 minutes max.	O	
6.6.6	At a desired value of 85% rel. humidity water condenses at the top of the canopy between an indicated rel. humidity of 60% and 85% at an incubator temperature > 36.0 °C and an ambient temperature of 20 °C to 26 °C. At least a display value of 80% rel. humidity must be attained.	V	
6.7	Skin temperature module (if applicable)		
6.7.1	Skin temperature connection if unit is fitted with skin temperature control For SW 10.n in air temperature sensor, for SW 11.n (1 or 2) only on left equipment side with pictograph.	C	
6.7.2	Connect skin temperature sensor to top socket (for SW 11.n and if 2 sockets are available) and leave bottom socket open. The sensor temperature will be displayed. If the temperature measured is outside the measuring range, the following messages will be displayed on the actual value display:		

above measuring range: „---“

below measuring range: „---“ O

6.7.3 Thermomonitoring (option)

Connect sensor to bottom socket and press “foot symbol” button.

The LED in the button comes on, the temperature is displayed as described under 6.7.2. O

Connect sensor to top socket.

6.7.4 Press “Check 36 °C” button

Display of actual skin temperature value = 36.0 ±0.1 °C. O

NOTE: The following test applies only to units with skin temperature sensor connections on the left hand side of the unit.

Plug the 36 °C test connector (7911314) into the yellow and white socket of the skin temperature sensors.

The displayed actual core temperature may deviate by a maximum of +/- 0.2 ° C from the simulated value (36 ° C). O

Wiggle the connected yellow 36 °C test connector horizontally and vertically.

The displayed actual core temperature may deviate by a maximum of +/- 0.2 °C from the simulated value (36 °C). O

On incubators with the "Thermomonitoring" option press and hold down the button “foot symbol”.

The displayed actual peripheral temperature may deviate by a maximum of +/- 0.2 °C from the simulated value (36 °C). O

Wiggle the connected white 36 °C test connector horizontally and vertically.

The displayed actual peripheral temperature may deviate by a maximum of +/- 0.2 °C from the simulated value (36 °C) as you wiggle the connector. O

6.7.5 Comparison measurement between skin temperature sensor and thermometer 2M 11111, not with single-use sensor

Test value: allowed deviation 0.4 °C.

Check the sensor for cable break.

O

6.7.6 Switch on skin temperature module with button “Control” in the skin temperature module

Green LED „Control“ lights up. The current skin temperature actual value is taken over as desired value and flashes:

Exception:

a) actual value < 35.0 °C => desired value = 35.0 °C

b) actual value < 37.0 °C => desired value = 37.0 °C

The current actual skin temperature value and “SEt” flash alternately. Acknowledge desired value by pressing the “+desired value” button or “-desired value” skin temperature.

Continuous display of desired value and actual value of skin temperature (except for alarms in the skin temperature module). O

6.7.7 Checking the desired value adjustment

Should the actual value deviate by more than 0.5 °C from the desired value a visual and audible alarm will be given. O

6.7.8 Pull plug of skin temperature sensor

For SW 20.nn
Visual and audible sensor alarm, heating off.

For SW 21.nn
Visual and audible sensor alarm after approx. 15 s, heating off. O

Then press “Control” button in the air temperature module and set air temperature desired value to 39.0 °C.

6.8 Power failure alarm

Set air temperature desired value to 39.0 °C, O_2 desired value to 40% by vol. and humidity desired value to 85%. Disconnect power cord for one minute.

Continuous visual and audible alarm.

Establish mains connection.

The desired values have not changed. O

6.9		Clear error list	O	
7.		Aspiration		
7.1	*	Replace bacteria filter CH 102 (set of 5: 6723976)	C	
7.1.1		Frame M 25858	C	
7.1.1.1		Jar holder	C	
7.1.1.2		Connecting hose	C	
7.1.1.3		Secretion aspiration hose M 25780	C	
7.1.1.4		Secretion sight glass or finger tip	C	
7.1.2		Jar M 20091 (2 x)	C	
7.1.3		Jar cap 2M 85011	C	
7.1.3.1		Check tightness of collar M 26008 and angled socket 2M 19063	C	
7.1.4		Float M 26007	C	
		Function		
		Assemble complete aspiration system: Build up vacuum and turn jar around.		
		Float is drawn in.		
		Turn jar around and shut off vacuum.		
		Float drops back.	O	
7.1.5		Relief valve (if fitted) with mica insulator R 17329	C O L	
7.1.6		Ejector		
7.1.6.1		Output with pediatric bronchial aspiration 2M 85125 (-0.5 bar)		
		Output -0.5 bar, of which -0.4 bar in 10 s.	O	
7.1.6.2		Output with bronchial aspiration 2M 85120 (-0.9 bar)		
		Output -0.8 bar, of which -0.7 bar in 10 s.	C O	
7.1.7		Vacuum gauge		
		Reference measurement.		
		Perm. tolerance ±4% of full scale value.	C O	
7.1.8		Shutoff valve		
7.1.9		Control valve	C	

7.1.10	CS connecting hose in line with national regulations	C L	
8.	Make unit available to the user in a ready-to-operate condition		
8.1	All unit covers and components must have been fixed in position	C	
8.2	There must be no dirt or tackiness noticeable on the unit which could impair safety	C	
8.3	Check unit labelling	C	
8.4	The incubator must be standing firmly and steadily	C	
8.5	Visually inspect unit assembly for perfect condition	C	
9.	Test Certificate Name: Date: Signature:		
10.	* These steps are regarded as repair work and therefore not included in the inspection service price.		

11. Report:

12. Appendix

12.1 Test equipment

Flowmeter, 10 to 120 L/min	79 00 718
Flowmeter block, 0,2 to 14 L/min	79 01 161
Flowmeter O2, 16 L/min, 5 bar	2M 85 502
Oxydig, complete or MiniOx 3000 or national equivalent oxygen measurement device	83 04 411 2M 22 464
Thermometer or Temperature- and humidy measurement device	2M 11 111 79 10 980
Socket wrench set, 1/4“	79 00 905
Mains power tester Secutest or or national equivalent mains power tester for 110/127 V voltage range	79 10 594
Sensor simulator, skin temperature	79 01 236
Sensor simulator, Incubator 8000	79 01 240
Test connector 36 °C	79 11 314
Dummy assembly, Incubator 8000, complete with connecting cable	79 01 764
Measuring lead, red 0,25 m	79 00 679
Measuring lead, black 0,25 m	79 00 680
Measuring probe, red Kleps 30	79 01 026
Measuring probe, black Kleps 30	79 01 027
Touch-up applicator, blue munsell	79 01 261
Touch-up applicator, light orange munsell	79 01 262

12.2 Tools and supplies for repair

Teflon strip 12 x 0,1 1-PTFE/BAM-DVGW CS	11 92 507
Oil HLP 32, 10 mL bottle, DIN 51524	2M 07 839
Cabel ties 2,4 x 200	87 12 065
Cotter-pin driver C2, 2 mm	79 10 216
Water pump pliers, 175 mm	79 01 283

12.3 Spare parts

every maintenance	- ambient filter	84 02 926
yearly	- rechargeable battery (Accu) - bakterial filter (Option „Bronchus-Absaugung“)	83 01 856 67 23 976
every 2 years	- filter screw	2M 19 622
every 6 years	- spring of spring catches - pressure regulator (Option „O2 controlling“)	84 00 496 84 02 745